REMARKS

In response to the Final Office Action mailed February 26, 2004, Applicants respectfully request reconsideration. To further the prosecution of this Application, Applicants submit the following remarks, have canceled claims and have amended claims. The claims as now presented are believed to be in allowable condition.

Claims 1-42 were pending in this Application. By this Amendment, claims 9-10, 19-24, 27 and 30-42 have been canceled without prejudice, and Applicants respectfully reserve the right to prosecute the canceled and similar claims in one or more related Applications. Accordingly, claims 1-8, 11-18, 25-26, and 28-29 are now pending in this Application. Claims 1, 5, 11, and 15 are independent claims.

Preliminary Matters

Applicants wish to thank Examiner Shah for providing a copy of a signed PTO-1449 for Applicants records regarding the cited Rickard reference.

Rejections under §103

Claims 1, 4, 5, 8, 9, 11, 14, 15, 18, 19, 21, 24-32, 34, 36, 38, 40, 41 and 42 were rejected under 35 U.S.C. §103(a) as being unpatentable over a publication entitled "MAPPING THE INTERNET WITH TRACEROUTE" (Rickard) in view of U.S. Patent No. 5,898,671 (Hunt et al.). Claims 2, 6, 10, 12, 16, 20 and 22 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rickard in view of Hunt and in further view of U.S. Patent No. 6,535,523 (Karmi). Claims 3, 7, 13, 17 and 23 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rickard in view of Hunt and in further view of U.S. Patent No. 5,926,463 (Ahearn). Claims 33, 35, 37 and 39 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rickard in view of Hunt and in further view of U.S. Patent No. 6,654,387 (Beser et al).

Applicants respectfully traverse the rejections of claims 33, 35, 37 and 39 and request reconsideration. Rather than amend each of these dependent claims to include all of the limitations of the claims from which they depend, Applicants have amended the independent claims to include all of the limitations of these dependent claims and

then canceled these dependent claims to further the prosecution of this Application. In particular, Applicants have amended independent claim 1 to include all of the limitations of claims 32 and 33, and then canceled claims 32 and 33. Additionally, Applicants have amended independent claim 5 to include all of the limitations of claims 34 and 35, and then canceled claims 34 and 35. Furthermore, Applicants have amended independent claim 11 to include all of the limitations of claims 36 and 37, and then canceled claims 36 and 37. Similarly, Applicants have amended independent claim 15 to include all of the limitations of claims 38 and 39, and then canceled claims 38 and 39. The claims are in allowable condition because they patentably distinguish over the cited prior art.

Rickard discloses a command line program which runs on a machine called TRACERT (page 2, last line through page 3, first line). To use this program, a user enters a command ("TRACERT") and an intended host ("WWW.BOARDWATCH.COM") (page 6, lines 1-4) which results in a DNS lookup. After the DNS lookup, the sending machine sends out three packets with their Time-To-Live (TTL) value set to 1 (page 6, lines 4-8). Upon arrival of the packets at a first router, the first router decrements the TTL value which now equals zero resulting in the first router issuing, back to the sending machine, an ICMP TIME EXCEEDED IN TRANSIT error message including the original time stamp and the IP number of the router sending the error message (page 6, lines 8-12). The original sending machine receives the ICM error message and notes the time of receipt as well as the IP number of the router that sent it (page 6, lines 12-14). The original sending machine then examines the time stamp information, and calculates the round trip transit time in milliseconds (page6, lines 14-18). The original sending machine then increments the TTL value and repeats this process (page 6, paragraphs 2-4). When the packets actually reaches the intended host, the host reads the packet's destination port number which is a ridiculously implausible port number (usually 33,434) but in any case something not ever recognized as a port (page 6, last paragraph). Port 33,434 is not only not one of the normal ports, but it is not likely to ever be (page 7, lines 1-2). In response, the intended host issues a "PORT UNREACHABLE" ICMP error message which, upon receipt by the original sending machine, terminates TRACERT (page 7, lines 2-5).

Hunt discloses a flow control technique for wider area ATM networks in which a receiver switch periodically transmits, to a transmitter switch, feedback messages indicative of the state of fullness of receiver switch buffers (column 2, lines 1-3 and Abstract). The transmitter switch then calculates an updated receiver buffer state and transmits cells accordingly (column 2, lines 10-11 and Abstract). Once the updated receiver buffer state is calculated, transmission of cells from the transmitter switch to the receiver switch is controlled in the transmitter switch based upon an allocation technique (column 2, lines 20-23 and Abstract).

Karmi discloses a system for sharing a resource among a set of users (column 2, lines 2-4). Each user has a usage rate selected from a set of variable rates, and each user's use of the resource is determined at least in part by the user's usage rate (column 2, lines 4-6). Each user also has a set of persistent vectors, each vector element corresponding to a rate among the set of available rates (column 2, lines 6-8). Selection of a user's usage rate from the set of available rates is based at least in part on one among the set of persistent vectors (column 2, lines 8-11). Fig. 4 of Karmi shows a system having a control unit 460 which receives information related to usage of resource 400 by users 420a-d (for example, current rate of use by one or more users, history of use by one or more users, reserve capacity available, predicted capacity, status of the resource, information relating to scheduled or unscheduled events that may affect resource capacity or status, etc.) (column 8, lines 40-47 and Fig. 4).

Ahearn discloses a method and apparatus for viewing the configuration of a computer network (column 3, lines 3-8). In order to collect information to determine the critical paths from one workstation to another, the Ahearn invention uses a tool called the "BA Traceroute tool," (column 20, lines 65-67). The router operates by sending out a packet to the destination address with a TTL set to 1 (column 21, lines 1-2). The first hop then sends back an ICMP error message indicating the packet could not be delivered because the TTL expired (column 21, lines 2-4). The packet is then resent with a TTL set to 2 (column 21, lines 4-5). The second hop then sends back an ICMP message indicating the TTL expired (column 21, lines 5-6). The process continues until the destination address is reached (column 21, lines 6-7).

Beser discloses a method 400 for network address table maintenance in a data-over-cable system (column 29, lines 49-51 and Fig. 18). The method 400 includes receiving a first message including a first network address for a second network device on a first network device at step 402 (column 28, lines 51-53). The first message includes identification information for communicating with the second network device (column 28, lines 53-55). The first network address is stored in a network address table associated with the first network device at step 404 (column 28, lines 55-57). A time value is associated with that first network address at step 406 (column 28, lines 57-58). The time value is a time value other than those typically associated with a network address in the network address table (column 28, lines 58-60). A determination is made as to whether a second message is received from the second network device within the time value at step 408, and if not, the first network address is deleted from the network address table at step 410 (column 28, lines 61-64).

In another embodiment of Beser, the deleting step 410 further includes deleting at least one second network address associated with the first network address (column 31, lines 10-13). In yet another embodiment of Beser, the time value is a time-to-live (TTL) value (column 31, lines 41-43). Here, the Address Resolution Protocol allows for the associate of a network address pair with a TTL value (column 31, lines 43-44). In general, a TTL value is a timeout value for a single table entry whereas a cache timeout typically applies to tht table as a whole (column 31, lines 44-47). A table entry is automatically deleted when the TTL value has expired (column 31, lines 47-48). Examples of TTL values are an IP54 lease time or an ARP cache timeout value (column 31, lines 48-49). In such an embodiment, another time value is introduced as the TTL value and the table entry is automatically deleted when this time value has expired (column 31, lines 49-51). The imposed TTL can be chosen sufficiently small to prevent further communication between the network device and the data network 28 should the network device fail to register properly (column 31, lines 51-60).

Claims 1-4, 25 and 32-33

As mentioned above, Applicants have amended independent claim 1 to include all of the limitations of claims 32 and 33, and then canceled claims 32 and 33. Applicants have also made minor clarifying amendments to some of the dependent claims for consistency. Applicants have taken care not to amend the claims in a manner that would raise new issues requiring the Patent Office to conduct further searching and/or consideration. Claims 1-4 and 25 are in allowable condition because they patentably distinguish over the cited prior art.

Claim 1, as amended, is directed to a method for obtaining resource usage information from a node of a network. The method includes the step of generating, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element. The method further includes the step of sending the data element to the node of the network. The step of sending the data element to the node includes the step of providing, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node. The method further includes the step of receiving a signal from the node of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network. The step of receiving the signal includes the step of obtaining, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element

The cited prior art does not teach or suggest, either alone or in combination, a method for obtaining resource usage information from a node of a network having a step of receiving a signal from the node of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network, wherein the step of receiving the signal includes the step of obtaining, as the

signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element, as recited in claim 1.

Rather, as the Office Action explains on page 6, paragraph 5, Rickard in view of Hunt fails to disclose a packetized communication having a history which identifies processing of a data element as a non-stale data element by a node even though the data element is stale by the time the node receives the data element. Applicants agree. Rickard in view of Hunt does not disclose the invention as recited in claim 1.

However, the Office Action then points out at the bottom of page 6 that Beser states that a TTL value can be chosen sufficiently small to prevent further communication between a network device and a data network should the network device fail to register properly. Afterward the Office Action contends that a feedback signal as taught by Hunt in a router or a switch may process a packet as non-stale by a node (switch or router) if the TTL is not equal to 0, even though the packet is stale by the time the destination node receives the packet (since the TTL=0). Applicants respectfully disagree. This contention is incorrect, and thus the rejection of claim 1 is improper as will now be explained below.

First, there is no teaching in either Rickard, Hunt or Beser of a node (e.g., a router or a switch) that processes a packet as a non-stale packet, even though the packet is stale by the time the node receives the packet (since the TTL=0). In contrast to this contention by the Office Action, Rickard teaches processing packets as stale packets when the TTL values of the packets equals zero by sending back an ICMP error message (e.g., see page 6, lines 8-12 of Rickard). Similarly, Beser teaches automatically deleting a table entry when a TTL value has expired vis-à-vis nont automatically deleting a table entry for non-stale packets (e.g., see column 31, lines 47-48 of Beser). Furthermore, Hunt, which teaches ATM cells and buffers for buffering the ATM cells, does not teach TTL values with the ATM cells whatsoever. It is also speculative at best for the Office Action to assert Hunt's feedback messages of buffer fullness for ATM cell flow as being desirable to combine with Rickard's TRACERT to begin with. Since there is no disclosure in the cited prior art of a node processing a

packet as a non-stale packet even though the packet is stale by the time the node receives the packet, there cannot be any disclosure in the cited prior art of a method having a step of obtaining, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element, as recited in claim 1. As a result, the rejection of claim 1 is improper and claim 1 patentably distinguishes over the cited prior art. Thus, rejection of claim 1 under 35 U.S.C. §103(a) should be withdrawn and claim 1 is now in allowable condition.

Because claim 2-4 and 25 depend from and further limit claim 1, claims 2-4 and 25 are in allowable condition for at least the same reasons.

Claims 5-8, 26 and 34-35

As mentioned above, Applicants have amended independent claim 5 to include all of the limitations of claims 34 and 35, and then canceled claims 34 and 35. Applicants have also made minor clarifying amendments to some of the dependent claims for consistency. Applicants have take care not to amend the claims in a manner that would raise new issues requiring the Patent Office to conduct further searching and/or consideration. Claims 5-8 and 26 are in allowable condition because they patentably distinguish over the cited prior art.

Claim 5, as amended, is directed to an apparatus for obtaining resource usage information from a node of a network. The apparatus includes a network interface for connecting to the network, and a controller coupled to the network interface. The controller is configured to generate, for a data element, a value for a parameter within the data element that will cause the node of the network to determine that the data element is stale when the node of the network receives the data element. The controller is further configured to send the data element to the node of the network through the network interface. The controller, when sending the data element to the node, is configured to provide, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node. The controller is further configured to receive a

signal from the node of the network, the signal including (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network. The controller, when receiving the signal, is configured to obtain, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

As mentioned above in connection with claim 1, the cited prior art does not disclose a node which processes a packet as a non-stale packet even though the packet is stale by the time the node receives the packet. Accordingly, there cannot be any disclosure in the cited prior art of an apparatus having a controller which is configured to obtain, as a signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element, as recited in claim 5. As a result, the rejection of claim 5 is improper and claim 5 patentably distinguishes over the cited prior art for at least the same reasons as claim 1. Thus, rejection of claim 5 under 35 U.S.C. §103(a) should be withdrawn and claim 5 is now in allowable condition.

Because claim 6-8 and 26 depend from and further limit claim 5, claims 6-8 and 26 are in allowable condition for at least the same reasons.

Claims 11-14, 28 and 36-37

As mentioned above, Applicants have amended independent claim 11 to include all of the limitations of claims 36 and 37, and then canceled claims 36 and 37. Applicants have also made minor clarifying amendments to some of the dependent claims for consistency. Applicants have take care not to amend the claims in a manner that would raise new issues requiring the Patent Office to conduct further searching and/or consideration. Claims 11-14 and 28 are in allowable condition because they patentably distinguish over the cited prior art.

Claim 11, as amended, is directed to a method for providing resource usage information in a node of a network. The method includes the step of receiving a data element from a source computer of the network, wherein the step of receiving the data element includes the step of obtaining, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node. The method further includes the step of determining that the data element is stale based on a parameter within the data element. The method further includes the step of removing the data element from the network and sending a signal to the source computer of the network. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network. The step of removing the data element form the network and sending the signal includes the step of providing, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

As mentioned above in connection with claim 1, the cited prior art does not disclose a node which processes a packet as a non-stale packet even though the packet is stale by the time the node receives the packet. Therefore, there cannot be any disclosure in the cited prior art of a method having a step of providing, as a signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element, as recited in claim 11. Thus, the rejection of claim 11 is improper and claim 11 patentably distinguishes over the cited prior art for at least the same reasons as claim 1. Accordingly, rejection of claim 11 under 35 U.S.C. §103(a) should be withdrawn and claim 11 is now in allowable condition.

Because claim 12-14 and 28 depend from and further limit claim 11, claims 12-14 and 28 are in allowable condition for at least the same reasons.

Claims 15-18, 29 and 38-39

As mentioned above, Applicants have amended independent claim 15 to include all of the limitations of claims 38 and 39, and then canceled claims 38 and 39. Applicants have also made minor clarifying amendments to some of the dependent claims for consistency. Applicants have take care not to amend the claims in a manner that would raise new issues requiring the Patent Office to conduct further searching and/or consideration. Claims 15-18 and 29 are in allowable condition because they patentably distinguish over the cited prior art.

Claim 15, as amended, is directed to a network node for providing resource usage information. The network node includes a network interface for connecting to a network and a controller coupled to the network interface. The controller is configured to receive a data element from a source computer of the network through the network interface. The controller, when receiving the data element, is configured to obtain, within the data element, a destination address which targets a device that is different than the node to route the data element in a direction leading to the device through the node. The controller is further configured to determine that the data element is stale based on a parameter within the data element. The controller is further configured to remove the data element from the network and send a signal to the source computer of the network through the network interface. The signal includes (i) an indication that the node of the network has removed the data element from the network, and (ii) resource usage information describing usage of resources within the node of the network. The controller, when removing the data element form the network and sending the signal, is configured to provide, as the signal, a packetized communication having a history which identifies processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element.

As mentioned above in connection with claim 1, the cited prior art does not disclose a node which processes a packet as a non-stale packet even though the packet is stale by the time the node receives the packet. As a result, there cannot be any disclosure in the cited prior art of a network node having a controller configured to provide, as a signal, a packetized communication having a history which identifies

processing of the data element as a non-stale data element by the node even though the data element is stale by the time the node receives the data element, as recited in claim 15. Thus, the rejection of claim 15 is improper and claim 15 patentably distinguishes over the cited prior art for at least the same reasons as claim 1. Accordingly, rejection of claim 15 under 35 U.S.C. §103(a) should be withdrawn and claim 15 is now in allowable condition.

Because claim 16-18 and 29 depend from and further limit claim 15, claims 16-18 and 29 are in allowable condition for at least the same reasons.

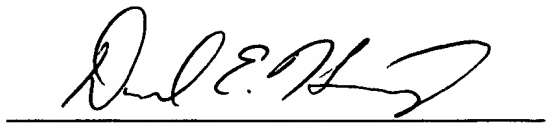
Conclusion

In view of the foregoing remarks, this Application should be in condition for allowance. A Notice to this affect is respectfully requested. If the Examiner believes, after this Amendment, that the Application is not in condition for allowance, the Examiner is respectfully requested to call the Applicants' Representative at the number below.

Applicants hereby petition for any extension of time which is required to maintain the pendency of this case. If there is a fee occasioned by this Amendment, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 50-0901.

If the enclosed papers or fees are considered incomplete, the Patent Office is respectfully requested to contact the undersigned collect at (508) 366-9600, in Westborough, Massachusetts.

Respectfully submitted,



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Attorney Docket No.: CIS99-1714

Dated: April 19, 2004